A Bilevel Price/Purchase Programming Model for the Aviation Industry in a Tourism Supply Chain

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Abstract

Bilevel programming approach decentralized the decision problem into leader
problem and follower problem in hierarchy structure. This paper develops a bilevel programming model to construct a reasonable price/purchase mechanism for the aviation industry and the other partners in a tourism supply chain. Then, an extended branch-and bound algorithm is used to find the optimal solution of the bilevel programming problem. Finally, the feasibility of the price/purchase mechanism is justified by a case study of Taiwan’s aviations to enhance the corporations of the partners in a tourism supply chain.

Keyword：Bilevel programming; Price/Purchase model; Extended Branch-and-bound algorithm; Tourism supply chain